Attachment 2

Michael C. Schlachter, CFA
Managing Director& Principal

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Dr. George Diehr
Chair, Investment Committee
California Public Employees' Retirement System
400 P Street, Suite 3492
Sacramento, CA 95814

Re: Internal Active Commodities Program

Dear Dr. Diehr,

Wilshire conducted an on-site review of the internal $2.8 billion active Commodity Program personnel, investment process, and resources. The internal commodities program is one of several investment areas within CalPERS intended to diversify risk and mitigate exposure of the total fund to unanticipated inflation.

This review was conducted as part of Wilshire's contractual requirement to periodically review all of the internal asset management functions.

In short, we believe the investment approach is appropriate for the active Commodity Program and Staff is aware of and appropriately manages the investment risks faced by the portfolios.

There has been significant turnover in the management of this portfolio, with the portfolio manager responsible for this strategy leaving CalPERS within the past year. Responsibility for managing this portfolio has been shifted to the team that manages the currency, swaps, sovereign debt, and treasury portfolio. In our opinion, the change from a single dedicated portfolio manager for this strategy to a team which we believe is already somewhat light on staff and which is responsible for a number of other portfolios is a downgrade in resources dedicated to the commodities area. The departed portfolio manager left behind the tools and models he developed to help Staff manage this portfolio, but we question whether the current Staff has the time, resources, or dedicated expertise to refine or further develop these tools as may be needed in the future.

We noted in our 2010 review that "the lack of redundancy in the Portfolio Manager and research positions does introduce some key person risk into the process" and that "as CalPERS' various programs continue to grow and the scope of the Commodity Program expands, additional staff members are likely to be needed."

Given the turnover that has occurred and the change in staffing for managing this portfolio internally, we believe that the fears we expressed last year about a lack of redundancy have been realized.

We have included a multi-page table at the end of this review which is similar to what we would complete for an external manager, detailing our opinion on specific aspects of the commodities program.

Recommendation

Given the Staff turnover for the commodities program, and the current workload of the team currently assigned the portfolio (which also manages the currency, swaps, sovereigns, and governments portfolios), we believe that CalPERS has three options at this time: 1, index the entire program and eliminate the active portfolio; 2, hire a new dedicated portfolio manager to run the program; 3, move the portfolio to external managers.

Discussion

Approximately 75% of the PERF's commodity exposure is indexed to the S&P GSCI Total Return Index which provides broad exposure to commodity markets, and 25% is devoted to active strategies. The SIO-Fixed Income has overall responsibility for managing the exposure of the portfolio and the mix of the various sub-sectors, although the day to day responsibilities fall on the shoulders of the currency / commodities / swaps / sovereigns / governments team.

The Portfolio Manager for the Commodities program oversees both the beta (index) and alpha exposures. The PM determines the appropriate mix of commodity sectors based on the relative attractiveness of potential alpha opportunities. For internal active management purposes, Staff has only one or two investment professionals responsible for researching, implementing and monitoring strategies designed to outperform the broader commodity market. These individuals also cover a number of other asset classes and securities. The alpha strategies will necessarily evolve over time as markets shift and the breadth of research required to find innovative approaches to capturing alpha is likely to require additional resources. As such, while the current Portfolio Manager is an experienced commodity professional, but is not currently dedicated to the commodities program, there is key person risk associated with the lack of depth in staffing.

As part of Wilshire's review, we met with Eric Busay who is the Portfolio Manager responsible for the various active and passive commodity strategies. We discussed the strategy for the program, how research is conducted, what risk controls are in place, how the portfolio is structured and how feedback and input is provided at each step of the investment process. The Portfolio Manager has experience in a variety of commodity markets from prior employment and displayed an understanding of how experienced traders and portfolio managers can add value by exploiting inefficiencies in particular markets. This approach mirrors the investment philosophy designed by the former, dedicated Staff member and broadly employs the tools and techniques he developed while at CalPERS. Further, Staff has taken a gradual and measured approach to implementing alpha strategies over time in order to appropriately balance the opportunity set with the time constraints of researching and executing new strategies.

Wilshire views the overall commodity investment approach favorably. As mentioned earlier, the majority of commodity exposure is done through inexpensive index swaps. Active strategies are then employed as opportunities are present in the market which are implemented via a swap on a custom index that reflects the positions CalPERS desires.

For the alpha strategies, part of the analysis performed before entering into the trade involves looking at historic returns and risk while understanding that past performance is not necessarily indicative of what might happen in the future. In particular, the Portfolio Manager prefers strategies with high Sharpe ratios which are diversified and have shown consistent performance across different market regimes. The overweighting of commodity sectors which display positive attributes such as positive or less negative roll yield and avoiding those whose value gradually declines as the futures contract ages are at the heart of the Commodity Program's active strategies. The performance of the alpha strategies is monitored for consistency with expectations given the existing market environment. Given the volatility inherent in the commodity markets, the PM is looking for acceptable long-term performance on a risk-adjusted basis while attempting to limit the downside.

The Commodities Program is managed with an investment policy which allows a significant amount of flexibility. Investment instruments which are permissible include futures, forwards, swaps, structured notes, and options – essentially Staff is given wide flexibility to pick the instrument which offers the most attractive characteristics. At this time, the alpha strategies are exclusively implemented using swaps set up with broker-dealers rather than through direct futures trading. There are no plans to utilize direct futures trading in the near term although the policy language does allow it. In general, we view this flexibility quite positively and feel the current Portfolio Manager has the experience to use it judiciously.

Currently, the tracking error of the commodity portfolio is monitored consistently with a maximum monthly tracking error target of about 100 basis points (approximately 3.5% annualized). Realized excess volatility has been much lower however at less than 35 basis points, although a month or two during the worst of the crisis may have exceeded the target.

As noted in reviews of other internal programs, Staff has leveraged CalPERS' unique position within the marketplace and worked with external dealers and asset managers to research potential alpha strategies within commodity markets. External counterparties realize the benefit of having a visible plan sponsor like CalPERS being an active proponent of commodity investment and have provided valuable insights. Using this approach, Staff remains abreast of current developments in the commodity markets. This does raise the question of whether Staff will become too dependent on information and research provided by others, however we believe in this case that the positives outweigh the potential negatives.

Risk Factors

Counterparty risk management is an important facet of the commodities program given that much of the exposure is done through swaps. The investment policy lays out the guidelines for determining credit worthiness as follows:

- For non-exchange traded derivatives, shall be at a minimum of "A3" as defined by Moody's Investor Service, "A-" by Standard & Poor's and "A-" by Fitch.
- The use of counterparties holding a split rating with one of the ratings below A3/A- is prohibited.
- The use of unrated counterparties is prohibited unless the counterparty is a wholly owned affiliate of a parent company that unconditionally guarantees payment and meets the above credit standards.
- Individual counterparty exposure, for non-exchange traded commodity derivatives, is limited to the 40% of the net notional option-adjusted exposure of the Commodities Program at the inception of a new position. There is an exception if the total non-exchange traded commodity derivatives exposure is less than $1 billion.

Wilshire feels these restrictions are appropriate and the Commodity Program has adhered to them. The largest counterparty exposure is currently approximately 30%, well below the 40% cap laid out in the investment policy. Further, exposure is diversified between six large financial institutions. Wilshire independently verified the current credit ratings of all current counterparties. The current minimum credit rating for counterparties to the commodities program is at least one notch above the minimum criteria. These ratings will need to be monitored, however, as the outlook for many large financial institutions is negative (but improving) according to Moody's. CalPERS currently has multiple levels of counterparty monitoring. Both the dedicated risk group and the fixed income group monitor counterparty risk exposures as well as the

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Commodity Program PM. Importantly, the commodity swaps can be cancelled with a phone call from the PM such that the PM can change counterparties on short notice, presuming the new counterparty can replicate the risk exposure being cancelled with the counterparty suffering a credit rating decline.

Operational and compliance risk is also present for the internal commodities portfolio, as it would be for any external manager. CalPERS has both an internal risk management and compliance department which is tasked with monitoring portfolios across asset classes. Given the size and complexity of the CalPERS portfolio, ensuring that the risk management group is adequately staffed is important.

As we regularly note, CalPERS, as a governmental entity, faces some organizational risks that for-profit enterprises do not face. For example, non-governmental organizations can induce key employees to stay with the firm long-term by offering ownership in the enterprise. CalPERS cannot match this retention incentive and is more at-risk for losing intellectual capital than a for-profit enterprise would be. This is an ongoing risk for the entire CalPERS organization, and has been discussed previously in our reviews of the other investment teams within CalPERS.

Conclusion

In brief, we believe that Staff has demonstrated the ability to both effectively and efficiently manage CalPERS' commodity portfolio. The investment philosophy of the Commodity Program is appropriate to CalPERS' needs and objectives, and plays an important role in the overall Inflation-Linked portfolio.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

Michael C. Schlachter, CFA
Managing Director & Principal

Wilshire Associates
370 Interlocken Boulevard Suite 620 Broomfield, CO 80021 **TEL** 303.626.7444 **FAX** 303.466.1537
www.wilshire.com

Strategy Evaluation: CalPERS Internal Commodity Strategy

Organization (0-100)

SCORE:	**COMMENTS:**
Ownership/Incentives (0-30) Direct Ownership/Phantom Stock Profit Sharing Performance Bonus Depth of Incentives Score: 5	Employees receive performance bonus only. Bonus is driven by multiple factors, some geared around the investment performance generated by the commodity team but others related to total fund performance. This bonus structure is currently under challenge from the plan sponsor. If this bonus structure is frozen / eliminated, we believe the impacts on Staff retention will be significant. Obviously, no equity ownership is available for employees. Further, Wilshire believes that employee morale has been negatively affected by the continued budget uncertainties and subsequent consequences for compensation.
Team (0-25) Communication Role of Manager, Research, and Operations Longevity of Team Score: 10	Team does not have redundancy built into the process. The dedicated portfolio manager responsible departed CalPERS in the past year and responsibility shifted to individuals who work on several other portfolios. Additional staffing would reduce the key-person risk and allow Staff to focus on a broader spectrum of value-added opportunities. Communication links are informal and proximity of team members is close, adding to the team's ability to communicate quickly. However, the speed of communication/approval could be improved but must be done without increasing the risk of overstepping the bounds set by the investment policy.
Quality of Key Professionals (0-15) Experience Quality of Leadership Quality of Education Score: 8	While the portfolio manager currently responsible for this portfolio has experience with a prior employer in the commodities area, this has not been an investment he has focused on in many years. The loss of a dedicated staff member for this asset class is a meaningful one for CalPERS.

Turnover of Senior Professionals (0-15) Low (<10%), Medium (<20%), High (>20%) Score: 3	Staff turnover for CalPERS (as an organization) is high at both the senior and junior levels, including the departure of 3 CIOs and 3 SIOs in the last several years, as well as a number of SPMs and PMs, including the PM for commodities. Lack of long-term retention incentives lead some staff to consider the organization as a "stepping stone" to better compensation in similar positions elsewhere.
Commitment to Improvement (0-15) Clear Mission Re-investment Process Enhance Score: 12	Strategies have clear mission and objectives. The objective of the inflation-linked portfolio in general and the commodities program are clear and concise. Resources are good and currently sufficient for the current tasks assigned to team; however, additional staff is likely to be needed as additional assets are invested and the depth of the team is improved.

<u>Philosophy/Process (0-100)</u>

SCORE:	**COMMENTS:**
Market Anomaly/Inefficiency (0-40) Permanent or Temporary Clear Identification Where and How Add Value Empirical or Academic Evidence to Support Score: 40	The Portfolio Manager implements both an index swap and an actively managed portion of the portfolio in an attempt to outperform through roll strategies, curve positioning and over/underweighting commodities versus the index. High score given as the approach is appropriate and flexible, given the nature of inefficiencies in the commodity markets.
Information (0-15) Unique Sources, Unique Processing Score: 10	Information sources are primarily external, which is appropriate given the size of Staff relative to the size of the market. Staff also has frequent contact with outside managers to gain information. High score given, but this score could improve with the addition of staff members to expand Staff's ability to internally research strategies.

Buy/Sell Discipline (0-15)
Disciplined/Structured Process
Quantitative and Qualitative Inputs

Score: 15

Buy/sell discipline based on relative merit of rolling future and depends on the shape of the futures curve and Staff's views on potential opportunities.

Portfolio Construction (0-15)
Benchmark Orientation
Risk Controls
Ongoing Monitoring

Score: 10

Portfolio construction techniques and monitoring are good. SIO-Fixed Income has ultimate oversight as to the construction of the portfolio but the Portfolio Manager has latitude to come up with trading strategies to exploit opportunities. The monitoring of the alpha strategies performance is primarily done through reports from swap counterparties. Wilshire recommends instituting a tracking error target of 2%.

Quality Control (0-15)
Return Dispersion
Performance Attribution
Performance Consistency
Style Drift
Compliance

Score: 10

The PM monitors risk through a deep understanding of the commodity market opportunities as well as the expected level of tracking error introduced by the active strategies. The portfolio management team lacks back-up as mentioned earlier. As mentioned in other internal program reviews, improvements can be made particularly in documentation of guidelines, roles, and responsibilities.

<u>Resources (0-100)</u>

SCORE:

COMMENTS:

Research (Alpha Generation) (0-40)

Appropriate for Product Style
Conducted Internally/Externally
Quantitative/Qualitative
Sufficient Databases and Models for Research
How are Research Capabilities Enhanced

Score: 20

Much of the research is provided by external sources but many times under the direction of Staff. Additional internal research is performed by Staff but further research could be conducting as Staff expands. This additional research could then be used in conjunction with the external research to help provide a more robust analysis of individual commodity markets.

Information/Systems Management (0-15) Ability to Manage Large Flows of Data Appropriate Systems for Research and Management Score: 10	Members of Staff all have access to Bloomberg for research and information on current market conditions. Ongoing improvements in attribution would help round out the systems more completely.
Marketing/Administration/Client Service (0-15) Dedicated and Knowledgeable Group Quality of Materials/Presentations of RFPs Responsiveness Measuring Client Satisfaction Score: 13	Since marketing and client service are not involved, unlike external sources for such a strategy, the full resources of the Fixed Income staff will be devoted to CalPERS, as the Portfolio Managers will not have to travel to service other clients or market to prospects. End client (Investment Committee) has regular meetings that usually require SIO and Portfolio Manager. The score was penalized somewhat given the lack of depth in the commodity team, following the departure of the PM responsible and the reassignment of commodities to an already fully-loaded team.
Trading (0-30) Turnover Relative to Process Sophistication of Trading Process Measurement of Trading Costs Operational Controls Score: 20	CalPERS' trading room is very sophisticated, was constructed in the last four years, and has subscriptions to all of the most popular trading resources, i.e. Bloomberg, Instinet, ITG, WM, etc. This is an areas shared by other internal programs. There is sufficient back-up and separation of responsibilities in the trading function. In particular, improvements could include ensuring that all trading is done on the desk, trade tickets are input in a timely manner and exploring separation of trading/PM duties. At the current time, the alpha strategies do not rely on the trading desk for most exposure comes through swap agreements rather than direct futures positions.

Discussion

Wilshire's score on this strategy of 62% or 186 out of 300 possible points, a decline of 27 points from our 2010 review, reflects the departure of the individual dedicated to commodities and the reassignment of the asset class to another team that is already near capacity. The other reasons for a less-than-perfect score overall are largely due to organizational-level issues such as senior turnover and lack of long-term retention incentives rather than issues specific to the commodity group.